



**U.S. Department of Justice**

*United States Attorney  
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January 29, 2015

By Email

Hon. Katherine B. Forrest  
United States District Judge  
Southern District of New York  
Daniel Patrick Moynihan U.S. Courthouse  
500 Pearl Street  
New York, New York 10007

**Re: *United States v. Ross William Ulbricht*, 14 Cr. 68 (KBF)**

Dear Judge Forrest:

The Government writes respectfully to move to preclude the testimony of Andreas M. Antonopoulos, a purported "expert" noticed by the defense in a letter sent to the Government on January 26, 2015 ("Defense Letter," attached as Ex. A). The subjects of testimony proffered in the notice all are either irrelevant to the case or do not require specialized knowledge, or both. In addition, the expert notice does not identify the opinions to be offered by Mr. Antonopoulos on these subjects, or the bases or reasons for those opinions, and thus does not comply with Rule 16(b)(1)(C). For all these reasons, Mr. Antonopoulos should be precluded from testifying.

**Applicable Law**

**A. Rule 702**

Rule 702 of the Federal Rules of Evidence provides:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

The party that proffers the testimony bears the burden of showing that it is admissible. *See Bourjaily v. United States*, 483 U.S. 171, 172-73 (1987). The District Court's exclusion of

expert testimony will be affirmed unless it constitutes an abuse of discretion. *See General Elec. Co. v. Joiner*, 522 U.S. 136, 142 (1997).

The party seeking admission of expert testimony must demonstrate that the testimony is based on the witness's specialized knowledge. *See United States v. Mejia*, 545 F.3d 179, 196 (2d Cir. 2008) (district court erred in allowing expert testimony "about matters that required no specialized knowledge"). Expert testimony is inadmissible when it merely addresses "lay matters which [the trier of fact] is capable of understanding and deciding without the expert's help." *Andrews v. Metro N. Commuter R.R. Co.*, 882 F.2d 705, 708 (2d Cir. 1989). The Second Circuit has warned against the "uncontrolled" use of expert testimony that might have the effect of providing "an additional summation by having the expert interpret the evidence." *United States v. Nersesian*, 824 F.2d 1294, 1308 (2d Cir. 1987). A district court must therefore be vigilant to prevent an expert from coming "usurping the jury's function." *Id.*

## **B. Rules 401 and 403**

Rules 401 and 403 of the Federal Rules of Evidence provide that evidence is admissible when it tends to make the existence of any fact that is of consequence more or less probable than it would be without the evidence, but that the evidence may be excluded if its probative value is substantially outweighed by, among other things, the danger of unfair prejudice, confusion of the issues, and misleading the jury. "Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it. Because of this risk, the judge in weighing possible prejudice against probative force under Rule 403 . . . exercises more control over experts than over lay witnesses." *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 595 (1993).

## **C. Rule 16**

A defendant must "give to the government a written summary of any testimony that the defendant intends to use under Rules 702, 703, or 705 of the Federal Rules of Evidence as evidence at trial." Fed. R. Crim. P. 16(b)(1)(C). "This summary must describe the witness's opinions, the bases and reasons for those opinions, and the witness's qualifications." *Id.* As the Advisory Committee notes to Rule 16 explain, the disclosure requirement "is intended to minimize surprise that often results from unexpected expert testimony, reduce the need for continuances, and to provide the opponent with a fair opportunity to test the merit of the expert's testimony through focused cross-examination." *United States v. Ferguson*, 3:06 Cr. 137 (CFD), 2007 WL 4539646, at \*1 (D. Conn. Dec. 14, 2007) (citation omitted). If a defendant fails to provide disclosures in accordance with Rule 16(b)(1)(C), the district court may exclude the expert's testimony at trial. *United States v. Mahaffy*, No. 05 Cr. 613 (ILG), 2007 WL 1213738, at \*2 (E.D.N.Y. Apr. 24, 2007).

## Discussion

### **A. The “Origins” of Bitcoin and the “Various Purposes and Uses” of Bitcoin Are Not Relevant to This Case**

According to the Defense Letter, the first two subjects that the defense intends to have Mr. Antonopoulos testify about are “the origins of Bitcoin” and “the various purposes and uses of Bitcoin.” Neither topic is relevant to this case. The “origins” and “various purposes and uses” of Bitcoin are no more relevant here than the “origins” or “various purposes and uses” of cash would be relevant in a traditional drug dealing or money laundering case.

Presumably, the defense plans to elicit testimony from Mr. Antonopoulos that Bitcoin has a *legitimate* origin and *legitimate* purposes and uses. However, neither point is in dispute here. None of the Government’s witnesses have testified to the effect that Bitcoin is inherently illegitimate; indeed, both Special Agent DerYeghiayan and former Special Agent Yum specifically testified, on direct, that using Bitcoins is not illegal in and of itself. (*See* Tr. 152:11-13 (“Q. And to be clear, is there anything illegal in and of itself about using bitcoins? A. No, there is not.”)). Bitcoin is relevant to the case only because it was the sole means of payment on Silk Road and because it was used to launder illegal proceeds from the site. How Bitcoin may be used in other contexts, or what uses it may have been originally conceived for, are simply not at issue here. Moreover, allowing such testimony could confuse the jury into believing that “Bitcoin” is somehow “on trial” in this case and that “expert” testimony concerning its legitimacy somehow cuts against the defendant’s guilt. Because this risk of prejudice outweighs any negligible potential probative value, the proffered testimony on these points should be precluded. *See United States v. Stewart*, 433 F.3d 273, 312-13 (2d Cir. 2006) (affirming district court’s preclusion of expert testimony concerning the legality of a certain stock trade, given that the testimony was irrelevant to whether the defendant had lied about the trade to investors, which was the subject of the criminal charge); *see also In re Air Crash Disaster at New Orleans, Louisiana*, 795 F.2d 1230, 1233 (5th Cir.1986) (noting that “trial courts must be wary lest the expert become nothing more than an advocate of policy before the jury” and that “the trial judge ought to insist that a proffered expert bring to the jury more than the lawyers can offer in argument”).

In any event, the Defense Letter does not even disclose what opinions Mr. Antonopoulos plans to offer concerning the “origins” or “uses” of Bitcoins, or what the bases for these opinions are. It merely lists these subjects as general topics of discussion. The disclosure thus plainly falls short of the requirements of Rule 16(b)(1)(C), and his testimony should be precluded for this reason as well. *See United States v. Valle*, 12 Cr. 847 (PGG), 2013 WL 440687, at \*5 (S.D.N.Y. Feb. 2, 2013) (“Merely identifying the general topics about which the expert will testify is insufficient; rather, the summary must reveal the expert’s actual opinions.”); *see also United States v. Duvall*, 272 F.3d 825, 828 (7th Cir. 2001) (“The Rule requires a summary of the expected testimony, not a list of topics.”); *Mahaffy*, 2007 WL 1213738, at \*3 (same).

**B. The Exchange Value of Bitcoin Is Not a Matter Requiring Specialized Knowledge and the Causes of Fluctuation in That Value Are Not Relevant to This Case**

The Defense Letter also indicates the defense intends to have Mr. Antonopoulos testify concerning “the value of Bitcoin over time since its inception, and the cause of various increases and decreases in the value of Bitcoin at certain points in time,” as well as “the dollar value of Bitcoins generated through transactions on Silk Road, at various points in time, including at the time of Mr. Ulbricht’s arrest.” These topics are not proper subjects of expert testimony in this matter.

To the extent the proffered testimony simply concerns the exchange value of Bitcoin at various points in time, such testimony plainly does not require specialized knowledge. The exchange value of Bitcoin is publicly available information that anyone can look up – just like the exchange value of foreign currency, gold, or silver, or the market price of a stock. Indeed, the defense has already successfully offered into evidence a chart, obtained from a publicly accessible website, depicting the exchange value of Bitcoin from 2011 to 2014. (See Def. Ex. B; Tr. 455). There is no need for an “expert” to “opine” further on this issue. See *United States v. Rea*, 958 F.2d 1206, 1216 (2d Cir. 1992) (noting that lay opinion testimony is unhelpful where the jury is in as good a position to assess the facts as the testifying witness); *United States v. Castillo*, 924 F.2d 1227, 1232 (2d Cir. 1991) (the district court should not admit testimony that is “directed solely to lay matters which a jury is capable of understanding and deciding without the expert’s help”).

To the extent the defense seeks for Mr. Antonopoulos to testify concerning the “cause” of fluctuations in the Bitcoin exchange rate, such testimony would be both irrelevant and unreliable. The Bitcoin exchange rate is relevant in this case only insofar as it concerns the dollar value of the funds that moved through Silk Road or that were otherwise involved in any specific transactions at issue in the case. *Why* the exchange rate was what it was on any particular given day has no relevance to any issue in dispute. Moreover, any “expert” opinion on the cause of various movements in the Bitcoin exchange rate would inevitably rest on speculation. The Bitcoin market is highly volatile and unpredictable. There is no generally accepted methodology or set of principles that one can apply to ascertain the reasons for its ups and downs. *Daubert*, 509 U.S. at 592-93 (in order to determine reliability of expert testimony, judge must assess “whether the reasoning or methodology underlying the testimony is scientifically valid”); *Three Crown Ltd. Partnership v. Salomon Bros., Inc.*, 906 F.Supp. 876, 894 (S.D.N.Y. 1995) (“When the assumptions made by an expert are not based on fact, the expert’s testimony is likely to mislead a jury, and should be excluded by the district court.” (quoting *Tyger Const. Co. v. Pensacola Const. Co.*, 29 F.3d 137 (4th Cir. 1994))).

In any event, the Defense Letter does not describe what fluctuations in the Bitcoin exchange value Mr. Antonopolous will testify about, what opinions he will provide concerning those fluctuations, or what the bases for these opinions are. It simply lists the “the cause of various increases and decreases in the value of Bitcoin at certain points in time” as a “subject” on which the witness will testify. Again, this disclosure does not satisfy the requirements of Rule

16(b)(1)(C) and fails to give the Government sufficient notice to prepare for effective cross-examination. The proffered testimony should therefore be precluded.<sup>1</sup>

**C. How to Use Bitcoins and How to Track Transactions on the Blockchain Are Not Matters Requiring Specialized Knowledge, and Any More Technical Aspects of the Bitcoin Network Are Not Relevant to This Case**

The Defense Letter also states that the defense intends to have Mr. Antonopolous testify concerning “the mechanics of Bitcoin transactions, including explanation of Bitcoin wallets, accounts, exchanges, and the [B]lockchain,” “the ability to track transactions and participants in Bitcoin transactions,” and “the ability to tie Bitcoins from Silk Road to Mr. Ulbricht.” In essence, the proffered testimony amounts to testimony concerning how to use Bitcoins and how to track transactions on the Blockchain, neither of which requires specialized knowledge and both of which have already been explained in the Government’s case.

The “mechanics” of Bitcoin transactions to which the Defense Letter refers – “wallets,” “accounts,” “exchanges,” and the “[B]lockchain” – are concepts familiar to any layperson who has ever used Bitcoins and can be explained in lay terms to the jury. Indeed, multiple Government witnesses – including Special Agent DerYeghiayan and former Special Agent Yum – testified concerning these concepts in the Government’s case without being qualified as experts. As former Special Agent Yum explained, a “wallet” is a computer file that enables a user to make transfers from his “addresses” (*i.e.*, accounts) on the Bitcoin network. As Special Agent DerYeghiayan explained, “exchanges” are businesses that exchange real currency for Bitcoins and vice-versa. And as both witnesses explained, the “Blockchain” is the public ledger where all Bitcoin transactions are recorded. An “expert” is not needed to explain these concepts any more than an expert is needed to explain how to make an online payment using Paypal or how to execute a stock purchase on E\*Trade. *See United States v. Amuso*, 21 F.3d 1251, 1263 (2d Cir.1994) (district court should not admit “expert testimony where the evidence impermissibly mirrors the testimony offered by fact witnesses, or the subject matter of the expert’s testimony is not beyond the ken of the average juror”); *LaSalle Bank Nat. Ass’n v. CIBC Inc.*, 08 Civ. 8426 (WHP), 2012 WL 466785 (S.D.N.Y. Feb. 14, 2012) (“[A]n expert witness may not offer testimony which merely rehashes the testimony of percipient witnesses.”).

By the same token, expert testimony is not required to explain how to “track” Bitcoin transactions on the Blockchain – including how to identify transactions on the Blockchain reflecting transfers from Bitcoin addresses associated with the Silk Road servers to Bitcoin addresses associated with defendant’s laptop. Tracking Bitcoin transactions simply involves looking up a Bitcoin address on the Blockchain and seeing the transfers flowing in or out of it. It

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<sup>1</sup> Even if the defense were to provide supplemental information sufficient to provide adequate notice, the Court should hold a *Daubert* hearing to determine whether Mr. Antonopolous’s opinions on the causes of fluctuations in the value of Bitcoin are reliable and would be likely to assist the jury, given the facially speculative nature of the subject matter. *See, e.g., Nimely v. City of New York*, 414 F.3d 381, 396-97 (2d Cir. 2005) (holding that district courts have a screening function to evaluate the qualifications of an expert, the reliability of the expert’s opinions, and the relevance of the proposed expert testimony).

is conceptually no different from looking at bank account records to check for transfers flowing from one account to another. Just as an expert is not required to explain that ministerial task – even if automated in some fashion – neither is one required to explain the concept in the context of Bitcoins. *Cf. U.S. v. Baker*, 496 Fed. Appx. 201, 204 n.1 (3d Cir. 2012) (phone company representative’s testimony concerning how to read cellphone location records not expert testimony); *John v. Griffen*, No. 13 Civ. 922 (RWS), 2014 WL 866277, at \*14 (S.D.N.Y. Mar. 4, 2014) (same). Again, former Special Agent Yum already testified extensively concerning this issue without being qualified as an expert.

While there are, of course, more complicated aspects of Bitcoin concerning the actual software code and cryptographic technologies on which the Bitcoin network is built, these aspects of the system are irrelevant to the case. Just as a person does not need a technical seminar on the computer networks used by banks to understand how wire payments can be sent online or how to read records of the wires after they are sent, the jury in this case does not need an expert to explain the innards of the Bitcoin network in order to understand how transfers of Bitcoins are made or how to look such transfers up on the Blockchain.

In any event, again, the Defense Letter fails to set forth what opinions Mr. Antonopolous will give concerning these subjects or the bases for those opinions. It only lists the subjects themselves. For this reason as well, his testimony on these subjects should be precluded.

**D. Bitcoin Speculation and Mining Is Not Relevant to the Case and Expert Testimony on These Subjects Cannot Substitute for Factual Evidence That These Activities Were the Source of the Bitcoins Found on the Defendant’s Laptop**

Lastly, the Defense Letter states that the defense intends to have Mr. Antonopoulos testify concerning the “concepts of Bitcoin speculating and Bitcoin mining.” These “concepts” are not relevant to the case. While the defense has suggested at times that some portion of the Bitcoins on the defendant’s laptop could have come from Bitcoin speculation or mining, such a defense requires *factual evidence* that these activities were the source of the Bitcoins on the defendant’s laptop. It would be an improper use of expert testimony for Mr. Antonopolous to explain the “concepts” of Bitcoin speculation and mining simply in order to invite the jury to speculate that such activities *could* have been where the defendant’s Bitcoins came from.

The Second Circuit’s decision in *United States v. Zafar*, 291 F. App’x 425 (2d Cir. 2008), is on point. In that case, the Second Circuit affirmed the district court’s exclusion of expert testimony the defense sought to introduce concerning the use of certain stock-selection software found on the defendant’s computer in a securities-fraud case. *Id.* at 427. Given “the absence of evidence indicating that defendant had, in fact, used the software for stock trading at the time of the charged crimes,” the court found it would have been inappropriate to allow expert testimony on “how [the] stock-selection software worked.” *Id.* The Second Circuit explained that the true purpose of the expert testimony appeared *not* to be “to show the jury how the software worked,” but rather was “to insinuate what had happened with respect to the relevant stock trades, a subject on which [the expert] was not a competent witness.” *Id.* The same is true here: the defense cannot substitute expert testimony about how Bitcoin speculation or mining works for



factual evidence that the defendant actually engaged in these activities – and engaged in them to such an extent that could explain the millions of dollars in Bitcoins recovered from his computer.

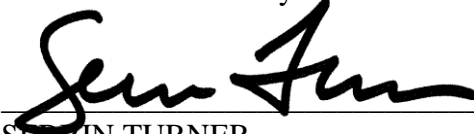
Finally, in any event, the Defense Letter again fails to specify what opinions Mr. Antonopolous intends to offer on Bitcoin speculation and mining, or the bases for these opinions. Merely listing these topics as “concepts” on which the witness will opine in some manner does not satisfy the prerequisites of Rule 16(b)(1)(C), and for this reason as well the proffered testimony should be excluded.

**Conclusion**

For the foregoing reasons, the Government respectfully requests that the proffered testimony of Mr. Antonopolous be precluded in its entirety.

Respectfully,

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